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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Mark L. Yarkosky

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EXAMINER

NGUYEN, DAVID Q

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/886,633	Applicant(s) YARKOSKY ET AL.	
	Examiner David Q. Nguyen	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-14, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 is/are allowed.
- 6) ☒ Claim(s) 7-8, 10-14 and 18 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 7-14 and 17-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (WO 01/31804 A1).

Regarding claim 7, Kim et al disclose a method for forcing a hand-off within a cellular wireless system on crossing a boundary from a first geographical area to a second geographical area (see page 3, line 15 to page 4, line 13; an apparatus for receiving and amplifying a pilot signal from a specified base station and transmitting it into an area where pilot pollution occurs), the method comprising a directional receiving antenna for receiving a preferred pilot signal in a directional receiving antenna from a selected base station antenna that provides wireless coverage in the second geographical area (see page 3, lines 15-22 and page 4, lines 7-13; the receiving antenna has a high gain and a narrow horizontal beam width and is structured to receive the signal from the specified base station and amplifies only the signals from a specified base station in case of pilot pollution);

Amplifying the preferred pilot signal to provide a boosted pilot signal (see page 3, line 23- page 4, line 1 and fig. 2; the signal is amplified); transmitting the boosted pilot signal within the second geographical area and substantially along a boundary between the first and the second geographical areas from a directional transmitting antenna (see page 4, lines 2-4 and lines 7-13 and fig. 3; the signal is transmitted to the mobile station via the transmitting antenna and the signal is transmitted into an area where a number of base stations co-exist).

Kim et al do not disclose the boosted pilot signal transmitted **only** along the boundary between the first and the second geographical areas. However, Examiner takes official notice that transmitting the boosted pilot signal into an area where a number of base stations co-exist of Kim et al. is equivalent to the boosted pilot signal transmitted **only** along the boundary between the first and the second geographical areas of the current application because of using the pilot signal to determine a hand-off between a serving area and neighbor areas.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Kim et al to include the boosted pilot signal transmitted **only** along the boundary between the first and the second geographical areas in order to avoid drop calls by using hand-off within a cellular system on crossing a boundary from a serving area to neighbor areas.

Regarding claim 8, Kim et al. also disclose aligning the directional receiving antenna with the selected base station in the cellular wireless network to selectively receive the preferred pilot signal, wherein the selected base station transmits the preferred pilot signal (see page 3, lines 15-22; the receiving antenna has a high gain and a narrow horizontal beam width and is structured to receive the signal transmitted from the specified base station).

Regarding claim 11, Kim et al disclose an apparatus and a method for forcing a hand-off within a cellular wireless system on crossing a boundary from a first geographical area to a second geographical area (see page 3, line 15 to page 4, line 13; an apparatus for receiving and amplifying a pilot signal from a specified base station and transmitting it into an area where pilot pollution occurs), the apparatus and method comprising a directional receiving antenna for receiving a preferred pilot signal in a directional receiving antenna from a selected base station antenna that provides wireless coverage in the second geographical area (see page 3, lines 15-22 and page 4, lines 7-13; the receiving antenna has a high gain and a narrow horizontal beam width and is structured to receive the signal from the specified base station and amplifies only the signals from a specified base station in case of pilot pollution); a radio-frequency amplifier having an input and an output, wherein the input accepts the preferred pilot signal from the directional receiving antenna and the output provides a boosted pilot signal (see page 3, line 23- page 4, line 1 and fig. 2; the signal is amplified); a directional transmission antenna that accepts the boosted pilot signal from the output of the radio-frequency amplifier and transmits the boosted pilot signal within the second geographical area and substantially along a boundary between the first and the second geographical areas (see page 4, lines 2-4 and lines 7-13 and fig. 3; the signal is transmitted to the mobile station via the transmitting antenna and the signal is transmitted into an area where a number of base stations co-exist).

Kim et al do not disclose the boosted pilot signal transmitted **only** along the boundary between the first and the second geographical areas. However, Examiner takes official notice that transmitting the boosted pilot signal into an area where a number of base stations co-exist of Kim et al. is equivalent to the boosted pilot signal transmitted **only** along the boundary between

Art Unit: 2617

the first and the second geographical areas of the current application because of using the pilot signal to determine a hand-off between a serving area and neighbor areas.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Kim et al to include the boosted pilot signal transmitted **only** along the boundary between the first and the second geographical areas in order to avoid drop calls by using hand-off within a cellular system on crossing a boundary from a serving area to neighbor areas.

3. Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (WO 01/31804 A1) in view of Sabat, Jr. et al. (US 20020016170 A1).

Regarding claims 10 and 14, Kim et al fail to teach selectively amplifying the preferred pilot signal with a surface acoustic wave filter. However, Sabat, Jr et al disclose amplifying the preferred pilot signal with a surface acoustic wave filter (see page 7, par. 74). Therefore, it would have been obvious to a person of ordinary skill in the art the time of the invention to modify Kim et al to include the SAW filter and amplifier disclose by Sabat Jr et al in order to take advantage of the sharp filtering operation of the SAW filter as suggest by Sabat Jr. et al

4. Claims 12-13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (WO 01/31804 A1) in view of Trompower et al. (US 6128512).

Regarding claims 12-13, Kim et al fail to teach wherein the directional receiving antenna is a Yagi antenna; wherein the directional transmitting antenna is a Yagi antenna. However, Trompower et al. teach the use of a Yagi antenna (see col. 9, lines 16-24). Therefore, it would have been obvious to a person of ordinary skill in the art the time of the invention to modify Kim

et al to include the above Yagi antenna disclosed by Trompower et al. in order to take advantage of the benefits of a Yagi antenna such as higher gain in the desired direction.

Regarding claim 18, Kim et al disclose an apparatus and a method for forcing a hand-off within a cellular wireless system on crossing a boundary from a first geographical area to a second geographical area (see page 3, line 15 to page 4, line 13; an apparatus for receiving and amplifying a pilot signal from a specified base station and transmitting it into an area where pilot pollution occurs), the apparatus and method comprising a directional receiving antenna for receiving a preferred pilot signal in a directional receiving antenna from a selected base station antenna that provides wireless coverage in the second geographical area (see page 3, lines 15-22 and page 4, lines 7-13; the receiving antenna has a high gain and a narrow horizontal beam width and is structured to receive the signal from the specified base station and amplifies only the signals from a specified base station in case of pilot pollution); a radio-frequency amplifier having an input and an output, wherein the input accepts the preferred pilot signal from the directional receiving antenna and the output provides a boosted pilot signal (see page 3, line 23-page 4, line 1 and fig. 2; the signal is amplified); a directional transmission antenna that accepts the boosted pilot signal from the output of the radio-frequency amplifier and transmits the boosted pilot signal within the second geographical area and substantially along a boundary between the first and the second geographical areas (see page 4, lines 2-4 and lines 7-13 and fig. 3; the signal is transmitted to the mobile station via the transmitting antenna and the signal is transmitted into an area where a number of base stations co-exist).

Kim et al do not disclose the boosted pilot signal transmitted **only** along the boundary between the first and the second geographical areas. However, Examiner takes official notice

Art Unit: 2617

that transmitting the boosted pilot signal into an area where a number of base stations co-exist of Kim et al. is equivalent to the boosted pilot signal transmitted **only** along the boundary between the first and the second geographical areas of the current application because of using the pilot signal to determine a hand-off between a serving area and neighbor areas.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Kim et al to include the boosted pilot signal transmitted **only** along the boundary between the first and the second geographical areas in order to avoid drop calls by using hand-off within a cellular system on crossing a boundary from a serving area to neighbor areas.

Kim et al fail to teach the receiving antenna is a Yagi antenna and the transmitting antenna is a Yagi antenna. However, Trompower et al. teach the use of a Yagi antenna (see col. 9, lines 16-24). Therefore, it would have been obvious to a person of ordinary skill in the art the time of the invention to modify Kim et al to include the above Yagi antenna disclosed by Trompower et al. in order to take advantage of the benefits of a Yagi antenna such as higher gain in the desired direction.

Allowable Subject Matter

5. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 9, Kim et al fail to teach aligning a directional receiving antenna with a selected base station antenna that provides wireless coverage in the second geographical area in the cellular wireless network to selectively receive a preferred pilot signal, wherein the selected

Art Unit: 2617

base station transmits the preferred pilot signal and adjusting the boosted pilot signal to have a signal strength within the first geographical area that is substantially less than an intended pilot signal for the first geographical area, as specified in the claim

6. Claim 17 is allowed.

Regarding claim 17, Kim et al fail to teach aligning a directional receiving antenna with a selected base station antenna that provides wireless coverage in the second geographical area in the cellular wireless network to selectively receive a preferred pilot signal, wherein the selected base station transmits the preferred pilot signal and adjusting the boosted pilot signal to have a signal strength within the first geographical area that is substantially less than an intended pilot signal for the first geographical area, as specified in the claim.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Q. Nguyen whose telephone number is 571-272-7844. The examiner can normally be reached on 8:30AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bost Dwayne can be reached on (571)272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David Q Nguyen/

Primary Examiner, Art Unit 2617

David Q Nguyen
Primary Examiner
Art Unit 2617